

memorandum

DATE: July 17, 1997

REPLY TO
ATTN OF:

SUBJECT: Department of Energy Historic Theme Project

TO: DOE Historic Preservation Contacts

Attached you will find the Draft Cold War Production Theme Matrix and an accompanying User's Guide that provides some background and explanation for this approach which was discussed at the April Forum in Nashville. I have developed a proposed plan on how we might proceed with this effort:

Proposed Plan

Each DOE site is being asked to:

- (1) Review and revise the Manhattan Project matrix (first stage matrix), making corrections and additions to shell list of process/activities and locations as necessary;
- (2) Complete second stage matrix by indicating with "X's" and "O's" where your properties (structures, features, etc.) might fit.
- (3) Develop a list of topics you will use to specifically classify Manhattan Project-related properties (structures, features, etc.) at your site/facility

I am hoping that the above three items will be completed by September 1, 1997. Please send your input to me, e-mail preferably.

Your list will be combined with those from other sites/facilities to prepare a comprehensive master list. Each topic in the master list will be assigned a unique code. The master list will then be sent to you for use in preparing your third stage matrix.

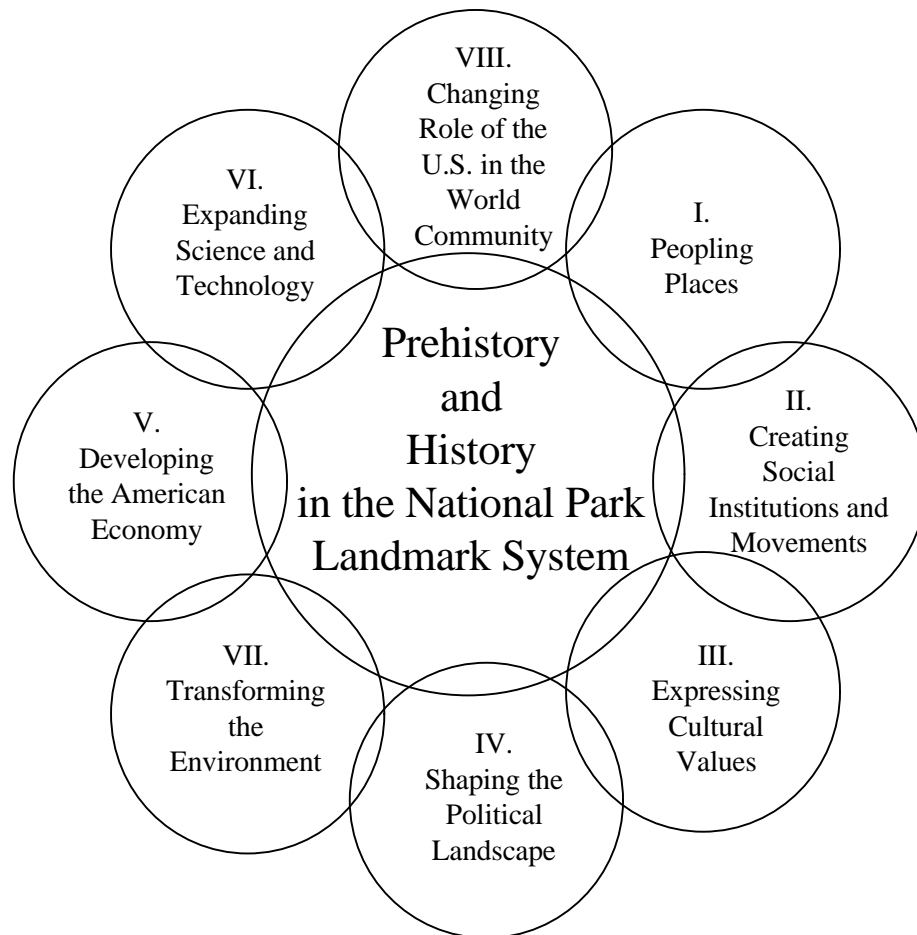
You will be requested to prepare third stage matrices when any issues arising from the second stage matrices have been resolved and the topic codes are available. This version of the matrix will break out each process/activity that has Manhattan Project-related properties (as shown on the second stage matrix) into a set of columns reflecting the topics identified in Item (3) above. Numerical data will then be entered reflecting the number of properties assigned to each topic. Instructions for completing the third stage matrices will be sent to you with the master topics list.

The success of this effort in producing a product that will be both comprehensive as well as complementing your historic preservation effort will depend upon your level of participation. Your cooperation in this effort is appreciated. Please call me if any questions at (202) 586-9581.

DOE HISTORIC THEME PROJECT

Congress has mandated that the full diversity of American history and prehistory is expressed in the National Park Service's (NPS) identification and interpretation of historic properties. The U.S. Department of Energy (DOE), through its Section 106 responsibilities under the National Historic Preservation Act (NHPA), is required to consider properties under its management that may be eligible for nomination to the National Register of Historic Places. Designation as National Historic Landmarks is also encouraged. Under its Congressional mandate, the NPS recently has published an updated thematic framework (NPS 1996) to guide the Service in working with its partners, including DOE, in the private and public sectors. A major aim of the framework is to help guide the NPS and its partners in evaluating the significance of resources for listing in the National Register or for designation as Landmarks.

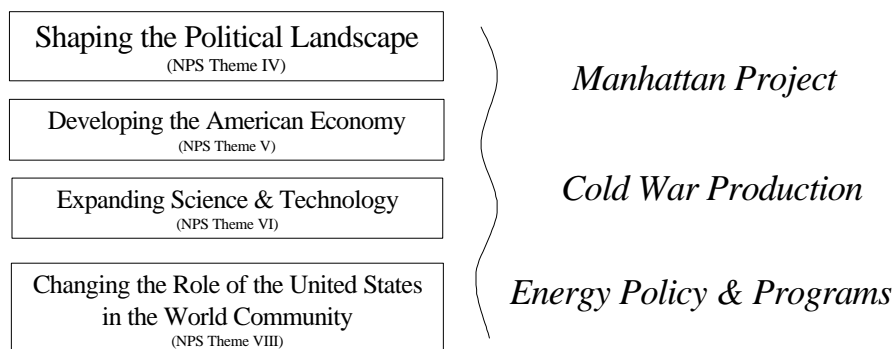
The NPS Thematic Framework is represented in the following diagram:



The eight themes shown embrace prehistory to modern times within our national borders and a broad range of human experience. Each theme represents a diverse complex of experience. The overlapping circles indicate the interrelationships that exist among the themes. The central circle symbolizes the conceptual framework underlying the themes. The Thematic Framework provides a structure for capturing the complexity and meaning of our national experience and making its past a coherent, integrated whole. The historical building blocks for the themes are people, time and place. People at all levels and across all categories are the agents of change. Time is a mechanism for organizing events and understanding processes, with an emphasis on the how and why of transformations from past to present. Place is the concrete locational context in which our history unfolds and recognizes that our national experience often has local and regional, as well as national, roots that are tied to communities at all levels.

Themes IV, V, VI and VIII (Shaping the Political Landscape, Developing the American Economy, Expanding Science and Technology, and Changing the Role of the United States in the World Community) are particularly relevant to DOE. Activities associated with the Manhattan Project, Cold War and energy policy and programs crosscut these four broad NPS themes and in themselves constitute major foci of Departmental activity that strongly shaped our history and have widespread roots at the local, regional and national levels. In concert with NPS's Congressional mandate and DOE's NHPA responsibilities, the EH Division initiated the DOE Historic Themes Project in 1996. This project has to date identified three DOE Historic Themes: the Manhattan Project Theme, the Cold War Production Theme and the Energy Policy and Programs Theme. The relationship of the DOE themes to the NPS themes is illustrated in the following diagram:

DOE Historic Themes Project



DOE HISTORIC THEME PROJECT

DRAFT COLD WAR PRODUCTION THEME MATRIX USER'S GUIDE

Background

The DOE Historic Theme Project will be implemented in several phases, each of which addresses a specific theme. Phase I addresses the Manhattan Project Theme. Phase II deals with the Cold War Production Theme. Phase III will focus on more recent scientific and technological achievements by DOE associated with its energy policy and program areas. Employing concepts developed by the National Park Service and discussed by Harry Butowsky (DOI-NPS) at the recent Cultural Resources Forum, a process versus location matrix approach will be used for each theme to facilitate the consolidation of information about properties eligible for nomination to the National Register of Historic Places or as a National Historic Landmark. This comprehensive approach will help streamline DOE's compliance with its NHPA and Outreach responsibilities. Phase I and Phase II have already been initiated. A draft shell matrix for the Manhattan Project Theme was distributed in July 1997, and a similar matrix for the Cold War Production Theme is now being distributed for comment.

Inclusion of Non-DOE Owned Properties in the Historic Theme Matrices

As part of DOE's stewardship responsibility for historic preservation, the DOE Federal Preservation Officer has initiated the Historic Theme Project. This project is being managed at Headquarters by EH and coordinated with the Historic Preservation Points-of-Contact at the DOE facilities. The DOE Historian, Skip Gossling, and his designees, may provide supplemental support to this project involving the collection of information that falls outside the scope of historic preservation responsibilities (e.g., biographic information, personal accounts as told by the workforce, etc.).

This guidance expands on earlier information provided to you on July 2, 1997 and addresses inclusion of the numerous non-DOE-owned properties in the shell matrices for the Manhattan Project and Cold War Production themes. These non-DOE-owned properties are included because they were either federally owned, rented by a federal organization, or federally funded activities that took place on the property. All of the activities that took place at these locations were managed by federal projects or programs that, today, are subsumed under the DOE.

These properties are important to DOE facility and project managers for two reasons:

(1) The activities that took place at these locations, and the people involved, provide an important context for evaluating the significance of structures that currently remain on DOE land or on properties that are affected by DOE-funded projects. Developing a context for the evaluation of a property is part of DOE's compliance responsibility under the NHPA Sections 106 and 110. For example:

Under DOE's NHPA Section 106 responsibilities, surveys should be conducted to determine what historic and prehistoric properties remain on DOE lands in areas that may be effected

by DOE activities. Activities include D&D, modifications to existing structures and land sales/transfers. Identified properties must be evaluated as to their significance for eligibility to the Natural Register of Historic Places and National Historic Landmarks Program, then avoided and/or mitigated as appropriate. Establishing a pre-determined context for evaluation of historic structures and equipment facilitates a more efficient evaluation process.

Under DOE's NHPA Section 110 responsibilities, surveys should be conducted to determine what historic and prehistoric properties still remain on DOE lands. Survey information, including standing buildings, equipment and the archaeological remains of earlier buildings, should be used in preparing the Cultural Resource Management Plans for each facility and program (see CRMP Guidance document). Developing contexts for the inventoried and anticipated historic properties is part of this planning process.

(2) Interaction with the owners of non-DOE-owned properties, that had importance during the Manhattan Project and Cold War Production eras provides an excellent opportunity for DOE managers to improve their historic preservation outreach and public education programs. Contact can be established between DOE and the owners of historically important properties on private, state and federal lands. Property owners/managers can be made aware that activities occurred in their buildings or on their lands which played an important role in shaping the nation's history. Property owners/managers would then have an opportunity to incorporate property histories into future management decisions. Public outreach and education are part of the National Strategy for Federal Archeology which was endorsed by the Secretary of Energy in 1991. Public awareness of significant archaeological resources on federal lands and the protection of these resources is a statutory requirement under ARPA Sec.10 (c).

Matrix Development and Submittal of Field Data

Theme matrices are being developed in three stages. The first stage involves developing a shell matrix of processes and activities versus locations. Topics within processes/activities also may be identified by site/facility managers. The initial shell matrices will be developed by EH.

The second stage involves site/facility manager review of each shell matrix for the accuracy and completeness of theme content. Matrix forms can be hand-annotated or electronically amended to indicate corrected or new information. Proposed changes might include: (1) correction of erroneous or incomplete information; (2) additional processes/activities and/or topics; and/or (3) inclusion of previously unrecognized sites/facilities.

Using the matrix format, site/facility managers will then identify the processes, activities and topics for which their site/facility has theme-related properties. This will result in a matrix which indicates the presence or absence of properties associated with each process, activity and topic.

The third stage of theme matrix development involves the collection of quantitative data about the numbers of properties associated with each process, activity and topic at each site/facility. The final matrix will provide quantitative measures of the types of properties present at each location

associated with the matrix theme.

Second and third stage matrices may be transmitted to EH by regular mail, facsimile or e-mail (the latter two options are preferred, as they will expedite the project).

Cold War Production Theme Shell Matrix

The initial shell matrix for the Cold War Production Theme is enclosed. Content for the matrix is derived from *Linking Legacies* (DOE/EM-0319), U. S. Department of Energy, Office of Environmental Management, January 1997, the summary of historic information that is contained on the poster reprinted on the last page of that document and other sources. Supplemental sources of information about Cold War activities, processes and sites owned by DOE or used by DOE-funded projects are provided in the attached bibliography.

Matrix Description

The enclosed Cold War Production Draft Theme Matrix consists of the shell matrix listing of processes and activities across the top and locations (sites/facilities) down the side. Processes and activities may be topically divided, depending on the nature of the applicable properties present at a site/facility. Matrix cells opposite a location should be marked with either an “X” or an “O” to indicate present or absent. Thus, an “X” would indicate that the site/facility has one or more properties at which the indicated process/activity/topic occurred. An “O” would indicate that the site/facility has never had properties at which the indicated process/activity/topic occurred.

The first page of the matrix lists the major sites/facilities at which Cold War Production activities occurred. Due to the complex nature of these activities, some of these sites/facilities also are listed under other site/facility categories in the matrix. Numerical entries under Major Sites should reflect the sum of entries made separately under the subordinate categories.

Topics

Shell matrices provide an opportunity to develop topics that help characterize processes/activities and provide context for historic properties. Site/Facility managers are encouraged to identify topics and classify their properties accordingly. These topics should also be used to facilitate site-specific NHPA Section 106 compliance actions regarding nominations to the National Register of Historic Places and National Historic Landmarks.

Examples of topics proposed at the 1997 DOE Cultural Resources Forum that could be applied to the Cold War include:

- A. Prehistoric and Historic Settlement (before Cold War Production activities).
- B. Land Acquisition (for Cold War Production activities).
- C. Famous People (associated with Cold War Production activities)

- D. Decision Making.
- E. Technological Breakthroughs.
- F. Work Force Services and Housing
- G. Training the Work Force
- H. Security.

This list is not exhaustive, and site/facility managers are encouraged to use these and add other topics as appropriate. The topics should be identified and transmitted to EH for compilation with lists from other sites/facilities. A master list of topics will be prepared by EH and shared with site/facility managers. The master list of topics will facilitate the uniform entry of data in third stage matrices concerning the number of properties present at a site/facility that are associated with each topic. In this manner, topics can be tied to counts of individual structures or structural groups (e.g., buildings, vaults, bunkers, etc.) and features (e.g., berms, craters, lagoons, pits, yards, etc.). This approach will provide a valuable tracking tool at the regional and national level for managing properties that are eligible for inclusion in the National Register or Landmarks Programs.

COLD WAR PRODUCTION HISTORIC THEME

THE U.S. COLD WAR NUCLEAR WEAPONS COMPLEX CULTURAL RESOURCES WORKING BIBLIOGRAPHY

BOOKS – PERIODICALS - TECHNICAL REPORTS

American Nuclear Society, *Controlled Nuclear Chain Reaction: The First 50 Years*, American Nuclear Society, LaGrange Park Illinois, 1992.

Antonas, N. J., J. W. Darby, and C. R. Hickey, “Remedial Action at the National Guard Armory and the University of Chicago in Chicago, Illinois,” preprint, private communication, from Bechtel National Inc. Oak Ridge, TN, undated.

Badash, Lawrence, *Scientists and the Development of Nuclear Weapons*, Humanities Press, Atlantic Highlands NJ, 1995.

Bebbington, W. P., *History of DuPont at the Savannah River Plant*, E. I. DuPont De Nemours and Company, Wilmington DE, 1990.

Bertsch, Kenneth A. and Linda S. Shaw, *The Nuclear Weapons Industry*, Investor Responsibility Research Center, Washington DC 1984.

Borman, Stu, “Chemists Reminisce on 50th Anniversary of the Atomic Bomb,” *Chemical and Engineering News*, pp. 53 - 63, July 17 1995.

Bradbury, Norris, “Los Alamos - The First 25 Years,” in Badash, Lawrence, Joseph O. Hirschfelder, and Herbert P. Broida, *Reminiscences of Los Alamos 1943 - 1945*, Volume 5 of Studies in the History of Modern Science, eds. Robert S. Cohen, Erwin N. Hiebert, and Everett I. Mendelsohn, D. Reidel Publishing Company, Boston, 1980.

Brown, Anthony Cave and Charles B. MacDonald. *The Secret History of the Atomic Bomb*. New York: The Dial Press/James Wade, 1977.

Buck, Alice L., *A History of the Atomic Energy Commission*, DOE/ES-0003/1, U.S. Department of Energy, Washington DC, July 1983.

Burke, Patrick (ed.), *The Nuclear Weapons World: Who, How, & Where*, Greenwood Press, Westport CT, 1988.

Christman, Al, “The Atomic Bomb: Making it Happen,” *American Heritage of Invention and Technology*, Vol. 11, No. 1, pp. 22-35 (Summer 1995).

Cipollone, Daiana, *The Fissile Material Cut-Off Debate: A Bibliographic Survey*, United Nations, New York, 1996.

Clark, Ronald W., *The Birth of the Bomb*, Phoenix House Ltd. London, 1961.

Cochran, Thomas B., William M. Arkin, Robert S. Norris, and Milton M. Hoenig, *Nuclear Weapons Databook, Vol II - U.S. Nuclear Warhead Production*, Ballinger Publishing Company, Cambridge, MA, 1987.

Cochran, Thomas B., William M. Arkin, Robert S. Norris, and Milton M. Hoenig, *Nuclear Weapons Databook, Vol III - U.S. Nuclear Warhead Facility Profiles*, Ballinger Publishing Company, Cambridge, MA, 1987.

Cooper, Dan, "The Atomic Bomb: Making it Possible," *American Heritage of Invention and Technology*, Vol. 11, No. 1, pp. 10-21 (Summer 1995).

Cuddihy, Richard G. and George J. Newton, *Human Radiation Exposures Related to Nuclear Weapons Industries*, LMF-112, UC-48, Inhalation Toxicology Research Institute, Albuquerque NM, September 1985.

D'Antonio, Michael, *Atomic Harvest: Hanford and the Lethal Toll of America's Nuclear Arsenal*, Crown Publishers Inc., New York, 1993.

Dawson, Frank G., *Nuclear Power: Development and Management of a Technology*, University of Washington Press, Seattle, 1976.

Del Tredici, Robert, *At Work in the Fields of the Bomb*, Harper and Row, New York, 1987.

Dibblin, Jane, *Day of Two Suns: U.S. Nuclear Testing and the Pacific Islanders*, Virago, London, 1988.

Fisher, Phyllis K., *The Los Alamos Experience*, Japan Publications Inc., Tokyo, 1985.

Francis, S., *Race Horses vs Work Horses: Competition Between the Nuclear Weapons Labs in the 1950s*, UCRL-JC-109724, University of California, Berkeley CA.

Freeman, Leslie J. *Nuclear Witnesses: Insiders Speak Out*. New York: W. W. Norton & Company, 1981.

Furman, Necah Stewart, *Sandia National Laboratories: The Postwar Decade*. Albuquerque: University of New Mexico Press, 1990.

Gallagher, Carole, *American Ground Zero: The Secret Nuclear War*, 1993.

Gerber, Michele Stenehjem. S., *On the Home Front: The Cold War Legacy of the Hanford Nuclear Site*, University of Nebraska Press, Lincoln NE, 1992.

Gerber, M. S., *The Hanford Site: An Anthology of Early Histories*, WHC-MR-0435, prepared for the U. S. Department of Energy Office of Environmental Restoration and Waste Management, Westinghouse Hanford Company, P.O. Box 1970, Richland Washington 99352,

October 1993.

Gowing, Margaret, *Reflections on Atomic Energy History*.

Graf, William L., *Plutonium and the Rio Grande*, Oxford University Press, New York, 1994.

Greenbaum, Leonard, *A Special Interest: The Atomic Energy Commission, Argonne National Laboratory, and the Midwestern Universities*, The University of Michigan Press, Ann Arbor, 1971.

Gregory, Shaun, *The Hidden Cost of Deterrence: Nuclear Weapons Accidents*, Brasseys (UK) Ltd., London, 1990.

Groueff, Stephanie, *Manhattan Project: The Untold Story of the Making of the Atomic Bomb*, Little, Brown, and Company, Boston, 1967.

Hafemeister, David, editor, *Physics and Nuclear Arms Today*, American Institute of Physics, New York, 1991.

Hansen, Chuck, *U.S. Nuclear Weapons*, Aerofax Inc., Arlington TX, 1988.

Hertsgaard, Mark, *Nuclear Inc.: The Men and Money Behind Nuclear Energy*, Pantheon Books, New York, 1983.

Hewlett, Richard G. and Oscar E. Anderson Jr., *The New World 1939-1946*, Volume I of *A History of the United States Atomic Energy Commission*, Pennsylvania State University Press, University Park PA, 1962.

Hewlett, Richard G. and Francis Duncan, *Atomic Shield, 1947/1950*, Volume II of *A History of the United States Atomic Energy Commission*, Pennsylvania State University Press, University Park PA, 1969.

Hewlett, Richard G. and Francis Duncan, Volume III of *A History of the United States Atomic Energy Commission*, Pennsylvania State University Press, University Park PA, 1969.

Hoddeson, Lillian, Paul W. Henriksen, Roger A. Meade, and Catherine Westfall, *Critical Assembly: A Technical History of Los Alamos During the Oppenheimer Years, 1943 - 1945*, Cambridge University Press, 1993.

Hilgartner, Stephen, Richard C. Bell, and Rory O'Connor, *Nukespeak: Nuclear Language, Visions, and Mindset*, Sierra Club Books, San Francisco CA, 1982.

Jette, Eleanor, *Inside Box 1663* (Los Alamos: Los Alamos Historical Society, 1977).

Jungk, Robert, *Brighter than a Thousand Suns: A Personal History of the Atomic Scientists* (New York: Harcourt Brace and Company, 1958).

Kokoski, Richard, *Technology and the Proliferation of Nuclear Weapons*, Oxford University Press, Oxford, 1995.

Lamont, Lansing. *Day of Trinity*. New York: Athaneum, 1965.

Lang, Daniel, *From Hiroshima to the Moon*, Simon and Schuster, New York, 1959.

Lanouette, William, with Bela Silard, *Genius in the Shadows: A Biography of Leo Szilard, the Man Behind the Bomb*, Charles Scribner's Sons, New York NY, 1992.

Laurence, William L., *Men and Atoms*, Simon and Schuster, New York, 1959.

Lawren, William, *The General and the Bomb: A Biography of General Leslie R. Groves, Director of the Manhattan Project*, Dodd Mead and Company, New York, 1988.

Leclercq, Jacques. *The Nuclear Age*.

Libby, Leona Marshall. *The Uranium People*. New York: Crane Russak and Charles Scribner's Sons, 1979.

Loeb, Paul, *Nuclear Culture: Living and Working in the World's Largest Atomic Complex*, New Society Publishers, Philadelphia Pennsylvania, 1986.

Los Alamos National Laboratory, "Polonium Human-Injection Experiments," *Los Alamos Science*, No. 23, Los Alamos National Laboratory, Los Alamos, New Mexico, 1995.

Los Alamos Scientific Laboratory, *The First 20 Years at Los Alamos: January 1943 - January 1963*, LASL News, January 1, 1963, Los Alamos Scientific Laboratory, Los Alamos, New Mexico.

Lyon, Fern, and Jacob Evans, editors, *Los Alamos: The First Forty Years* (Los Alamos: Los Alamos Historical Society, 1984).

Maag, Carl and Steve Rohrer, *Project Trinity 1945-1946: United States Atmospheric Nuclear Tests Nuclear Test Personnel Review*, DNA 6028F, Defense Nuclear Agency, U.S. Department of Defense, Washington DC, 15 December 1982.

Makhijani, Arjun, Howard Hu, and Katherine Yih, *Nuclear Wastelands: A Global Guide to Nuclear Weapons Production and Its Health and Environmental Effects*, The MIT Press, Cambridge MA, 1995.

McKay, Alwyn, *The Making of the Atomic Age*, Oxford University Press, Oxford, 1984.

Metropolis, N. and E. C. Nelson. "Early Computing at Los Alamos." *Annals of the History of Computing*, 4, No. 4, pp. 348 - 357, October 1982.

- Miller, Richard L., *Under the Cloud: The Decades of Nuclear Testing*, The Free Press, London, 1986.
- National Research Council, *The Nuclear Weapons Complex*, National Academy Press, Washington DC, 1989.
- National Research Council, *Nuclear Wastes*, National Academy Press, Washington DC, 1996.
- Nordheim, Lothar W., "Old Times and New Horizons," in *Oak Ridge National Laboratory Annual Report 1970-71*, Oak Ridge National Laboratory, Oak Ridge Tennessee, 1971; also in *Oak Ridge National Laboratory Review*, fall 1976.
- Nuclear History*, the Newsletter of the Nuclear History Program, Nuclear History Program, College Park MD.
- Oak Ridge National Laboratory, *Oak Ridge National Laboratory Review*, Vol. 25, Numbers 3 and 4, 1993.
- Rapoport, Roger. *The Great American Bomb Machine*. New York: Ballantine Books, 1971.
- Rhodes, Richard. *The Making of the Atomic Bomb*. New York: Simon and Schuster, 1986.
- Rhodes, Richard. *Dark Sun: The Making of the Hydrogen Bomb*, Simon & Schuster, New York, 1995.
- Robinson, George O., *The Oak Ridge Story: The Saga of a People Who Share in History*, Southern Publishers, Inc., Kingsport, Tennessee, 1950.
- Rodden, Clement J., "Before NBL," *Journal of the Institute of Nuclear Materials Management*, Volume 18, Number 1, pp. 14 - 15, November 1989.
- Roensch, Elearno Stone, *Life Within Limits*, The Los Alamos Historical Society, Los Alamos New Mexico, 1993.
- Rogers, Paul, *Guide to Nuclear Weapons*, Berg Publishers Ltd., Oxford UK, 1988.
- Rosenthal, Debra, *At the Heart of the Bomb: The Dangerous Allure of Weapons Work*, Addison-Wesley, Reading MA, 1990.
- Sacher, George A., "A Sentimental History of Site B," *Argonne News*, Vol. 4, No. 5, 1952.
- Sanger, S. L. with Robert W. Mull, *Hanford and the Bomb: An Oral History of World War II*, Living History Press, Seattle, 1989.
- Sapirie, Samuel R., *A Secret Mission and Other Disclosures: Memoirs of the Manager, Oak Ridge Operations, U.S. Atomic Energy Commission*, Oak Ridge Community Foundation, Oak

Ridge Tennessee, 1992.

Schwarz, Frederic C., "The Half-life of History," *American Heritage of Invention and Technology*, Vol. 11, No. 1, pp. 6 - 7 (Summer 1995).

Seaborg, Glenn T., *Nuclear Milestones - Volume One: Builders and Discoverers*, U. S. Atomic Energy Commission, Washington DC, May 1971.

Seaborg, Glenn T., *Nuclear Milestones*, W. H. Freeman and Company, San Francisco CA, 1972.

Seaborg, Glenn T., "Silver, Copper, and Honest-to-God Copper," *Journal of the Institute of Nuclear Materials Management*, Vol. 18, No. 1, 1989.

Serber, Robert, "Theoretical Studies at Berkeley," in *Behind Tall Fences*, Los Alamos Historical Society, Los Alamos, New Mexico, 1996.

Smith, Alice Kimball, *A Peril and a Hope: The Scientists Movement in America 1945-47*, Chicago: The University of Chicago Press, 1965.

Smyser, Dick, *Oak Ridge 1942-1992: A Commemorative Portrait*, Oak Ridge Community Foundation Inc., Oak Ridge Tennessee, 1992.

Srouji, Jacque, *Critical Mass*, Aurora Publishers Incorporated, Nashville TN, 1977.

Sylves, Richard T. *The Nuclear Oracles: A Political History of the General Advisory Committee of the Atomic Energy Commission, 1947 - 1977*. Ames, IA: Iowa State University Press, 1987. [This has the best material on Jane Hall, including pictures; also Ruth Patrick, Evans Hayward].

Technology Review staff, "The Legacies of World War II: A Roundtable Discussion," *Technology Review*, Vol. 98, No. 4, May/June 1995.

Truslow, Edith C. and Ralph Carlisle Smith, *Project Y: The Los Alamos Story. Part II, Beyond Trinity*, Volume II of The History of Modern Physics, 1800-1950, Tomash Publishers, Los Angeles, 1983.

Ulam, S. M., *Adventures of a Mathematician*, Charles Scribner's Sons, New York, 1976.

U.S. Congress, Office of Technology Assessment, *Dismantling the Bomb and Managing the Nuclear Materials*, Washington DC, 1994.

U.S. Congress, Office of Technology Assessment, *Complex Cleanup: The Environmental Legacy of Nuclear Weapons Production*, OTA-O-484, Washington DC, 1994.

U.S. Department of Energy/Martin Marietta Energy Systems Inc., *Oak Ridge National Laboratory Review*, Chapter 1, "Wartime Laboratory", Vol. 25, Nos. 3 and 4, 1992.

U.S. Department of Energy, *Nuclear Weapons Complex Reconfiguration Study*, DOE/DP-0083, U.S. Department of Energy, Washington DC 20585, January 1991.

U.S. Department of Energy, *Plutonium Working Group Report on Environmental, Safety and Health Vulnerabilities Associated with the Department's Plutonium Storage*, Volume 1: Summary, DOE/EH-0415, U.S. Department of Energy, November 1994.

U.S. Department of Energy, Division of Electric Energy Systems, *Finding of No Significant Impact Proposed Corrective Action for the Northeast Site at the Pinellas Plant in Largo, Florida*, DOE/EA-0976, U.S. Department of Energy, Washington DC.

U.S. Department of Energy, Office of Fissile Materials Disposition, *Storage and Disposition of Weapons-Useable Fissile Materials: Draft Programmatic Environmental Impact Statement*, Volume I, DOE/EIS-0229-D, U.S. Department of Energy, Washington DC, February 1996.

U.S. Department of Energy, Environmental Restoration and Waste Management, *Site Maps and Facilities Listings*, U.S. Department of Energy, Washington DC, November 1992.

U.S. Department of Energy, Office of Environmental Management, *Estimating the Cold War Mortgage: The 1995 Baseline Environmental Management Report, Executive Summary*, March 1995, DOE/EM-0232, U.S. Department of Energy, Washington DC, March 1995.

U.S. Department of Energy, Office of Environmental Management, *Estimating the Cold War Mortgage: The 1995 Baseline Environmental Management Report, Volume I*, March 1995, DOE/EM-0232, U.S. Department of Energy, Washington DC, March 1995.

U.S. Department of Energy, Office of Environmental Management, *Estimating the Cold War Mortgage: The 1995 Baseline Environmental Management Report, Volume II: Site Summaries*, March 1995, DOE/EM-0232, U.S. Department of Energy, Washington DC, March 1995.

U.S. Department of Energy, Office of Environmental Management, *Closing the Circle on the Splitting of the Atom: The Environmental Legacy of Nuclear Weapons Production in the United States and What the Department of Energy is Doing About It*, U.S. Department of Energy, Washington DC, January 1995.

U.S. Department of Energy, Office of Environmental Management, *Environmental Management: Progress and Plans of the Environmental Management Program*, U.S. Department of Energy, Washington DC, November 1996.

U.S. Department of Energy, Office of Environmental Management, *Linking Legacies*, DOE/EM-0319, U.S. Department of Energy, Washington DC, January 1997.

Van Arsdol, Ted, a series of articles on "The City that Shook the World" in the *Columbia Basin News*, Richland WA, 1958.

Weart, Spencer, *Scientists in Power*, Cambridge, MA: Harvard University Press, 1979.

Weart, Spencer, *Nuclear Fear: A History of Images*, Cambridge, MA: Harvard University Press, 1988.

Weber, Robert L., *Pioneers of Science: Nobel Prize Winners in Physics*, Second Edition, Adam Hilger, Bristol and Philadelphia.

Wilson, Jane, editor, *All in Our Time*, Bulletin of the Atomic Scientists, Chicago, 1974.

Wyden, Peter, *Day One: Before Hiroshima and After*, Simon and Schuster, New York, 1984.

ON-LINE SOURCES

Home pages of the DOE laboratories and facilities on the World Wide Web.

U.S. Department of Energy, Office of Human Radiation Experiments web site:
«<http://www.ohre.doe.gov>»

The Internet and the Bomb: A Research Guide to Policy and Information about Nuclear Weapons: «<http://www.wideopen.igc.apc.org/nrdcpro/nuguide/guinx.html>»

Nuclear Program Web: «<http://www.wideopen.igc.apc.org/nrdc/nrdcpro/nuclear/index.html>»